

The Learning Engineers!



“Bridging Values and Learning”

The ViTaL Development & Research Programme

Report No. 2



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The Learning Engineers!

How the language, concepts, principles and practice of learning power can improve consistency and coherence across a network of six city primary schools, with a collective focus on developing the values, attitudes, contributions and achievements of effective, motivated, lifelong learners and citizens, in line with the five outcomes of *Every Child Matters*.

This is the Report of an ELLI Research and Development Project involving Six Schools in the Primary Phase in Bristol between October 2005 and September 2006

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- Westbury Park Primary - Headteacher: Alan Rees
- Victoria Park Junior School - Headteacher: John Searle
- Victoria Park Infant School – Headteacher: Jenny Holt
- The School of Christ the King – Headteacher: Anne Peachey
- Christ Church CE VC Primary – Headteacher: Tony Tween



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1. Introduction

The six schools involved in this project had formed a networked learning community with a driving focus on “Creating a Learning Curriculum”, aiming to inspire learning and raise achievement. In most other ways, they were diverse, three in the North of the city, three in the South, serving very different social and economic areas, some with substantial experience of working with Learning Power ideas, others with none. They were committed from the start to disseminating their findings through networking with other schools, Education Action Zones and other available channels.

In line with research into learner-centred cultures, the project was devised to research into three key elements of practice and provision:

- the learner: individual attitudes, values, dispositions, beliefs, achievement
- the teacher: impact on professional development, attitudes, values and practices
- similarities and differences across and between schools in their approaches to school improvement and self-evaluation and in their pupils’ value-added scores.

ViTaL Partnerships was engaged to design and manage an action-enquiry project, using the Effective Lifelong Learning Inventory (ELLI), its concepts, assessments and strategies, to explore its impact on and capacity to illuminate these three elements, involving the Year 1 and Year 5 teachers and the Headteachers of all six schools as co-researchers and their children as partners in and subjects of the enquiry.

2 Methodology

The projects twin aims, therefore, were:

- to investigate the impact of the shared language and ideas of learning power and its assessment on the values, attitudes, contributions, achievements and capabilities of young learners of the same ages in different schools and
- to gauge the potential of these interventions to improve value-added scores and assist and improve consistency of strategic planning and self-evaluation of six primary schools in the same city serving diverse populations.

These were formulated into **four research questions (RQs)**, which informed the methodology, data collection and analysis:

- What changes can be seen in the values, attitudes, responsibility to self, others and school and contributions to the community, of young learners in primary schools as a result of teachers developing learning strategies based on the language, concepts, principles and practices of learning power?
- How do teachers respond to the language, concepts and principles of learning power and how do they perceive their own and their pupils’ attitudes and learning practices, individually and collectively after introducing them into their pedagogy?
- What is the relationship between learning power variables and the value-added outcomes of identified individuals, groups and schools – as measured by Fischer Family Trust analysis?
- How does the learning from these interventions influence and affect consistency of school improvement planning and self-evaluation in a diverse group of schools?

The research was a collaborative action enquiry, led by the Head Teachers and their Year 5 and Year 1 teachers. It was facilitated by a practitioner/researcher who worked with the teams through the course of the project, assisting in training, data collection and analysis.

The ELLI learning power ideas and assessments were introduced to one group in each school in each of Years 1 and 5. Their twelve teachers and the six Headteachers were all trained in their use in November 2005 and inducted into the methods required, which included: managing ELLI assessments; devising and implementing interventions designed to build learning power in their children/students; and gathering and recording of narrative and qualitative evidence.

The ELLI learning profiles were first administered between December 2005 and February 2006, and then again in June and July 2006. The year five students completed the full 72 item profile on line. The year one students completed a self assessment task based on the seven dimensions of learning power before the project. This learning profile data was then used reflectively and diagnostically by teachers and learners within the curriculum.

Attainment and value-added data was collected for one school and matched to the learning profile data.

The schools responded collaboratively to the task by developing a set of curriculum guidelines and lesson plans based around the theme of Isambard Kingdom Brunel (IKB). A special feature of the project was the decision, by all six schools, to make use of the bi-centenary of the birth of IKB, to create a common focus and starting point for the knowledge content of the project, culminating in the production of a collection of teaching materials called 'Brunelli'. (See Appendix 1). The pioneering engineer, who had had such an impact on the history of their city, was also adopted as a model learner, to investigate and critique. The entire curriculum in all six schools was dedicated to this work during an intensive week at the beginning of March 2006, which began with a training day for all the staff, introduced by an inspirational address on learning and values from Professor Bart McGettrick. The teachers of Year 1 and Year 5 classes all utilised the power of metaphor to carry the meanings of the seven dimensions of learning power in the classroom, through story and display work and the creation of themed learning resources, such as animal puppets, concept-line strings from wall-to-wall and laminated, self-assessment place-mats. (See Appendix 2)

Qualitative and narrative evidence was collected by two researchers through:

- sixteen semi-structured interviews, with all six Head Teachers (or Acting HT), the five Year 5 teachers and five Year 1 teachers (or Year 1 / 2 teacher) in each school
- ten focus groups with six Year 5 students and six Year 1 students in each school.

These were conducted in the first two weeks of June 2006, some three months after the main interventions, and shortly before the Year 5 students were to take the Optional National Tests. Altogether, twenty-two pages of transcripts were collected and approximately six hours of digital audio recording were made for reference purposes.

The data were analysed qualitatively by the researchers. Quotations were selected for transcribing verbatim (*italicised below*) or paraphrased to illustrate the findings, if both researchers agreed that they met all of the following criteria:

- Being freely offered in relation to general, open questions, without leading or prompting
- Either being reported as an example of a general observation agreed with by at least five-sixths of a focus group or being repeated or echoed by several other respondents in semi-structured interviews
- Relevance to the research questions

The ELLI profiles were analysed before and after using paired T-tests. In addition, the achievement data were analysed in relation to the learning profile data through a regression computation.

3 Findings and evidence

The findings below were arrived at by the researchers immersing themselves in the qualitative, quantitative and narrative data collected through the above process, identifying emerging key themes in relation to each research question and verifying these by matching them with available evidence from the documentation which met the criteria listed above. The findings are organised under each of the four research questions (RQs). The RQs are in bold type, italicised and underlined, with their related findings numbered and presented in bold type below them, each followed by the evidence in support of them, either quoted verbatim and *italicised*, or paraphrased closely, using the same key words as the respondents.

School codes: CCH: Christchurch; SB: Stoke Bishop; WP: Westbury Park; CK: Christ the King; VPJ: Victoria Park Juniors; VPI: Victoria Park Infants

3.1 RQ1 (Evidence taken from focus groups - see appendix 3)

What changes can be seen in the values, attitudes, responsibility to self, others and school and contributions to the community, of young learners in primary schools as a result of teachers developing learning strategies based on the language, concepts, principles and practices of learning power?

3.1.1 Even quite young learners were receptive to the ideas and concepts of learning power, particularly as mediated through the ‘animal metaphors’; they were able to explain them in some detail and relate them to learning activities

- *The ‘Stickability Tortoise’ (Resilience): when you stick to something you can’t really do and you don’t give up (CCH Y1)*
- *The Bees (Learning Relationships) sometimes work together, sometimes they don’t (SB Y1)*
- *The animals make it easier to understand. In the story about the animals, they used their skills (CCH Y5)*
- *ELLI means being able to be all the animals (CCH Y1)*
- *They help us learn! (CK Y1)*
- *In some ways you forget about it (Changing & Learning) because it’s so common but as you learn and remember you change and your mind grows – and you change to understand something you didn’t understand before (SB Y5)*
- *The spider is the one I remember best because he connects up from the old to the new. (VPI Y1)*
- *Chameleon helps me learn cos sometimes I think of an idea, then it is not good, so I change that to a new one. (VPI Y1)*

3.1.2 Students demonstrate reflective self-awareness across this age range (Y1-Y5), reporting a strong sense of themselves as Changing and Learning and improving in all the seven learning dimensions

- *I've changed my ways like a chameleon! (CK Y1)*
- *I used to scribble, now I draw (CCH Y1)*
- *I'm getting better at Changing, Creativity and Stick-ability and I need to get better at Changing and Creativity (CCH Y5)*
- *We used to ask one question; now we ask loads of questions (CCH Y5)*
- *The problem board has been really helpful (for Critical Curiosity) (WP Y5)*
- *I am using my imagination a lot more (Creativity) (CK Y1)*
- *I've become more curious; I think of things I need to learn (WP Y5)*
- *I've got better at Learning Relationships with ELLI; last year I worked well on my own; now I work better in groups (WP Y5)*
- *Resilience: I'm starting to keep doing things – taking really hard challenges and seeing how long I can keep it up (SB Y5)*
- *Connections (Meaning Making): sometimes we do literacy and science and I used to get completely mixed up. Now I see how they link up. (CCH Y5)*
- *I keep realising I've made it too complicated for myself; I need to work out how to make things – Owl (Strategic Awareness) (CCH Y1)*
- *First I didn't know. Tortoise helped me to know I was going too fast, now, I know to go slower. (VPI Y1)*
- *When I think of the cat it gives me lots of questions. (VPI Y1)*

3.1.3 From Year 1, students are able to use the language of the animal metaphors to describe their own learning processes and self-assessments

- *My marble run kept falling off. At last I remembered to put paper walls in; I had to be creative Unicorn to make it and an Owl to sort it out (CCH Y1)*
- *Tortoise helped (Resilience) because my friends wanted me to race them. I kept on going even though I didn't go slow and I won the race (SB Y1)*

3.1.4 Some students observe and report positive change in each other as well as themselves

- *My friend saw a way of making wheels stick (to his model) by turning it upside down – owl and unicorn (CCH Y1)*
- *He's been more involved – helped me to relax (CCH Y5)*

3.1.5 Students sometimes attribute their progress at school explicitly to their understanding and application of the learning power concepts and metaphors

- *I think stick-ability made a difference to me because it made me feel I stick at things more often than I used to. In Maths I used to give up easily – now I've found most ways of working (things) out (CCH Y5)*
- *In Reception, you think the puppets are amazing, so you do everything they say (WP Y5)*
- *Without the seven animals we would probably be stuck on a Maths problem (SB Y5)*
- *The High 5 Hoopoe helps us make friends because he makes you realise how important friends are in life. Eg make life fun,, share secrets, trust, honesty, can help you (VPJ Y5)*

3.1.6 Students report positive improvements in their friendships, working relationships and attitudes to others as a result of working with ELLI

- *We did a lot of work in groups (in the ELLI week). I got to understand how they felt about relationships – we got along better and made our friendships stronger (CCH Y5)*
- *Before we heard about ELLI not everyone got on with each other but now we all get along OK, even if we're not friends. No one is left out. (CCH Y5)*
- *My friend and I (both) wanted to choose. I didn't want that game so we decided a game that we both wanted and we played that game – being bees (SB Y1)*
- *Our friendship has got stronger – spider and bee (CK Y1)*
- *When someone's stuck on my table, really needs help, I can help them (CK Y1)*
- *In reception, I didn't play with many people, just one friend. Now I play with lots. (WP Y5)*
- *(ELLI) showed us it's better to get on with everyone – not be best friends with everyone, but be friendly to everyone (WP (Y5)*
- *I used to be bossy, now I'm less bossy; I realise it's good to let other people have ideas (WP Y5)*

3.1.7 Students sometimes attribute improvements in their relationships to other learning dimensions, as well as Learning Relationships

- *Creativity gave us new ways of being friendly and new ideas for games to play with each other (CCH Y5)*
- *Stick-ability! (deciding not to complain but just kept going when rejected) I wanted to play with a friend. It didn't work first time; did second time (SB Y1)*

3.1.8 Students sometimes make links between the learning power concepts they have learned at school and times when they find them helpful them out of school

- *At home, working for my music theory exam, when I do practice questions, if I can't do it I keep going (CCH Y5)*
- *With my violin, if I had a hard piece I didn't practice; now I'm getting better as I practice for longer (CCH Y5)*
- *It helps you for later in life...to use maths to fit things in the house (SB Y5)*
- *When I was at my house, there was something at school I remembered – I was stuck with a word and I remembered what my teacher had said about how to remember things (SB Y1)*
- *...linking things so we can connect our learning...curiosity has helped us in class and at home...how to help our family (CCH Y5)*

3.1.9 Many students report that amongst the most important changes in them brought about by working with ELLI has been in feeling more positive, responsible and self-sufficient in their learning

- *I used to be quite bored; now I can always find things to do. I'm in charge. We control our own minds, so we can do it if we want to (CCH Y5)*
- *You can make up your own ways of solving problems in Maths (CCH Y5)*
- *I want to get better at being a learner; grow up and enjoy life. I want to learn! (SB Y5)*
- *Now I can ask questions, instead of wondering what the answer is (CCH Y5)*
- *(What matters most is...) knowing all I can do; I've got all these things in my head that can help me. (CK Y1)*

- *I've got far more resilient...used to ask all the time "What do you do? What do you do?" Now I do something for myself, like look up in a dictionary... (WP Y5)*
- *I can think in different ways instead of one way. (VPJ Y5)*
- *It helps us with our work. It helps us with our attitude. I can say "I'm tired of this!" but if I have resilience I can say "I'll keep going at this!" (CK Y1 – a very low achiever)*

3.2 RQ2 (Evidence taken from semi-structured interviews with teachers - see Appendix 3)

How do teachers respond to the language, concepts and principles of learning power and how do they perceive their own and their pupils' attitudes and learning practices, individually and collectively, after introducing them into their pedagogy?

3.2.1 Teachers report that working with ELLI has had a significant and positive impact on their practice in many ways, leading them, for example to:

- become much more focussed on skills for learning, rather than just content
- reflect on and evaluate process, not just outcomes
- re-organise resources: such as by creating seven 'sacks' of learning aids, one for each dimension
- plan to integrate the seven dimensions as a strand in lesson planning and observation
- use more variety in lesson planning – such as by including life skills
- use the language of learning power to clarify things for students
- work more consistently across the school
- keep things simple: just highlighting the dimensions in planning
- use reward systems for rewarding progress with the learning power dimensions
- become more practical, more visual
- make cross-curricular links, using imagination, drawing pictures and using activities to improve learning
- think really carefully about covering all the seven dimensions in planning – may have been subconscious before, now consciously
- cater for the children who are naturally curious
- use assemblies to link the animal themes with learning
- 'iconise' the seven dimensions – making them easy to use on paper, so you can keep track of whether you've given enough attention to each
- Start each lesson with connecting activities – e.g. a 'feeling bag' with lots of things connected with the (topic)
- Use ELLI as a framework for values, thinking skills, Philosophy4Children... to 'bring it all in' for the School Action Plan
- Compile a list of ideas for share with other teachers and be sparked off by
- Create a 'Question Wall' for everyone in the school to use – not about answering but 'being curious!'

3.2.2 Teachers report that the work has had a significant and positive impact on their feelings and attitudes towards their role and self-efficacy, saying such things as:

- *The ideas have been very powerful*
- *Very keen teachers are talking about them and using them*
- *They have been empowering for teachers, who have gained in confidence*
- *We have too much to do in too little time – (we are) looking at the curriculum to see if we can do less but much better! ELLI matches really brilliantly with that – intensive periods*

of focus on process not content – joining things together and making connections, not just lumping everything together into a theme like ‘The Weather’

- *It’s making me realise...what I do naturally and what I don’t do so often...*
- *When the kids have got hold of it, they make you do it anyway so it doesn’t have to be a whole lot of extra work*
- *the ‘Brunelli’ week gave a very clear focus: made the kids very confident – it took the pressure off – lovely to have a clear week where that was the focus*
- *it has been really useful in helping me understand how children learn, getting them to feed back to me what they need to work on so that I can include it in my planning*
- *I wouldn’t have picked it up without the training on the seven dimensions: (giving me) the big picture and the area to work on*
- *It has raised awareness of ways to improve learning – not embedded yet or used all the time, but opening up a forum for that and debate*
- *We know exactly what we’re aiming for with the children*
- *The cuddly toys were hilarious – got everyone talking*
- *It has changed where I was sitting, from being at the front of the class to be in the middle like a child*
- *I saw ELLI as a bridge to cross over – to develop for themselves the ability to learn: it’s crucial; they can do things they enjoy*
- *It’s helped me to become more relaxed as a teacher – facilitator – step back*

3.2.3 Teachers report a significant and positive impact on children’s attitudes to their learning and confidence in themselves, saying such things as:

- *They have become more responsible and independent learners, using strategic awareness, thinking of the next steps for themselves – helping the teacher to become more of a facilitator, not them depending on you*
- *We can see a tangible difference in the children’s attitudes, that they are seeing school as being more than a place where you are told what to do*
- *Children are more motivated....now all children turn up for SATS whereas in the past there were several who didn’t because they were afraid to be found out how stupid I am. Everyone is really trying. They are enjoying work. School is not seen as a threatening thing any more.*
- *There was a group of boys talking and I asked them why. They said, ‘We’re planning our writing and we’re not sure whether we should be using a mind-map or a concept line*
- *They work better together*
- *Their self-esteem (is improved) – they’re ready to give it a go*
- *Children being able to talk about their learning, and learning that shared language – and strategies they can use to help themselves*
- *“It’s OK to find things hard because we know we can get better!” Part of the classroom culture is: “If I’m stuck, I can...!”*
- *Having a common language with the children: they know what we mean when we talk about the Seven Dimensions: Strategic Awareness, Learning Relationships, Resilience...*
- *It’s made them more aware of their strengths and what they need to work on*
- *Before, they didn’t know what collaboration meant; now, they talk about the tasks and how best to share them out: “You’re good at this...!” etc*
- *They’ve become much more aware of each other’s strengths and the ways they can use their own strengths to help others*

- *There's been a positive response on getting on with each other. They were working together on bridges. One child said, "I was surprised by K. He normally does nothing; now he's rolled his sleeves up."*
- *They understand other things are valued, not just marks – e.g. getting on with people; resilience; life-skills constantly being reinforced*
- *They are starting to notice themselves. "I do that well and I need to do that better – setting themselves targets. They're enjoying it, too!"*
- *The children are becoming a lot more confident in recognising their strengths – competent too! One boy realised he was creative and didn't think his strengths were really acceptable – now he knows it's valued and he'll do that a lot more now.*

3.3 (RQ3) (Evidence from quantitative data created by:

- ELLI pre-intervention surveys
- ELLI post-intervention surveys
- Achievement/progress data supplied by the schools

All available data sets analysed by University of Bristol - for 95-page report, please see Appendix 4)

What is the relationship between learning power variables and the value-added outcomes of identified individuals, groups and schools – as measured by Fischer Family Trust analysis?

Owing to limitations of school-based data capture (set out in Appendix 4), it was not possible to arrive at a clear conclusion in relation to this question. Observations from the data analysis are included here, for interest, that go beyond what this question requires.

3.3.1 Mean Learning Power outcomes across the five schools with Year 5 students (i.e. excluding VPI)

Learning Power scores of all five schools in pre-intervention surveys, and in the four schools excluding Victoria Park (for which these data were unavailable) in the post-intervention surveys are summarised in the following table:

School (nos.)	Changing & Learning		Critical Curiosity		Meaning Making		Creativity		Strategic Awareness		Learning Relationships		Resilience		Comments
	pre-	post-	pre-	post-	pre-	post-	pre-	post-	pre-	post	pre-	post-	pre-	post-	
CCH	62.7	62	55.7	52.8	61.3	56.9	59.1	53.3	52	50.5	66.9	60.9	51.4	53.4	Sig. reduced Cr & LR Poor conditions for post test
23															
CK	64.6	68.8	61.1	56.7	62.1	60	60.5	61	60.3	60.8	63.2	61.8	54.9	52.3	
20															
SB	73.3	69	61.3	57.5	67.7	63.6	63.6	55.6	59.7	56.4	72	67.1	57.7	54.1	Sig. reduced Cr & LR
43															
VPJ	70.3		59.4		65.3		64.9		62.4		62.1		49.7		No post-data available
55															
WP	68	70.7	55.3	52.8	57.7	60.2	55.4	57.2	53.9	55.3	63	67.1	63.1	59.6	Sig. raised LR
49															Sig. reduced Res
Total															
190															
Colour Key:			Significant rise pre- to post-		Significant fall pre- to post-		Clear but non-significant rise		Clear but non-significant fall						

Table 3.3.1: Mean learning power assessment outcomes across five schools

Overall, these data show little statistically significant change in learning power profiles between the pre-intervention and post-intervention surveys. Of the change that is recorded, more is down than up. This does not, in general, support the qualitative and narrative evidence above. The schools may know of local contributory factors not so far reported. Otherwise, there are several possible reasons for this finding, including:

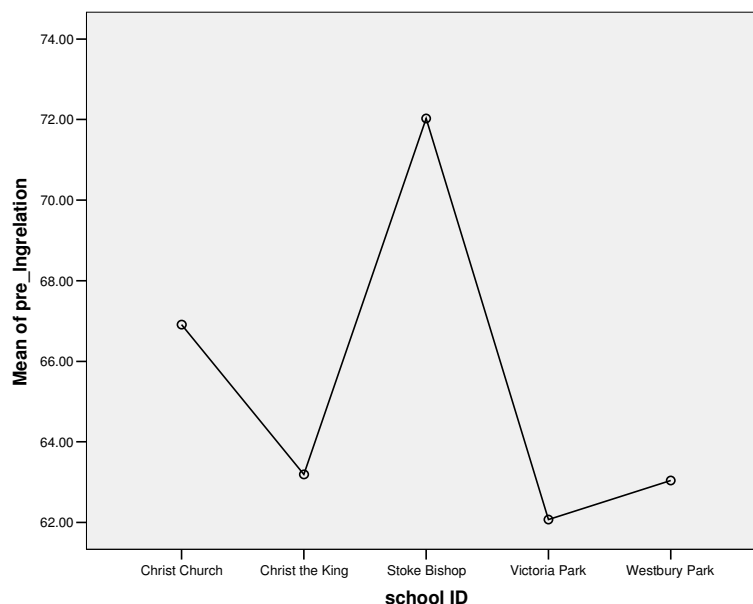
- The pre-intervention (baseline) surveys were conducted after work on the ELLI concepts had begun and students may have reported themselves more highly on the seven dimensions in the immediate context of this work is this clear in the methodology?
- In responding to the semi-structured interviews, students and teachers may have been reporting change related to learning that had already impacted on them before the pre-intervention surveys
- Conditions for the second survey were less favourable and may have pre-disposed students to report themselves as weaker on some of the dimensions: (the Year 5 teacher at CCH reported problems with heat and ventilation; it was Summer and work towards optional tests may have replaced the creative work on 'Brunelli' in the Spring)
- At least two of the schools (SB and WP) had been using ELLI concepts for some years, so their 'baseline' at the pre-intervention stage might have been higher as a result, though these two schools were not consistent in showing overall decline in learning power – Westbury Park being the one school to show more increase than decline
- Students' learning power on the seven dimensions may have been relatively high in the first survey in all schools as a result of their existing primary practice and curriculum (e.g. work on Values Development reported at SB and WP) which would be consistent with earlier ELLI research
- On-going work with these concepts may make some students who are new to them at the point of the first survey more self-aware and inclined to be more self-critical in response to the survey questions second time round.

3.3.2 Statistical differences between schools' learning power scores

There were statistically significant variations between the schools, in the pre-intervention scores only, in *Meaning Making*, *Creativity*, *Strategic Awareness*, *Learning Relationships* and *Resilience*. The fact that there were no significant differences between schools in their post-intervention scores might at first glance be taken to reflect increased consistency between schools as a result of the work (see RQ4) but it is mostly explained by a greater decline in learning power scores in higher scoring schools, rather than lower scoring ones rising to similar levels.

The most significant differences in the pre-intervention data were between:

- SB and VP in Learning Relationships – about 10% variation



- WP and CCH in Resilience – about 11.5% variation

- WP and VP in Resilience – about 13.5% variation

These are illustrated by the plots in figures 3.3.3 a) & b) below:

Fig. 3.3.3 a) Pre-test plot of Learning Relationships across 5 schools

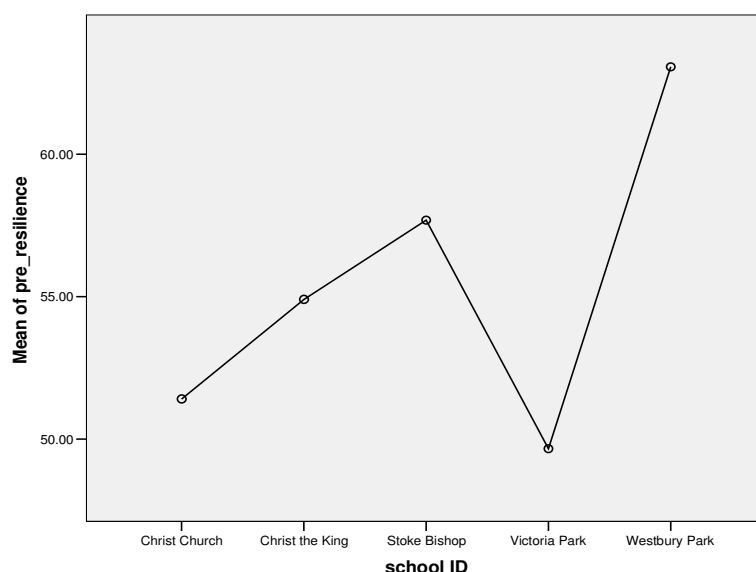


Fig. 3.3.3 b) Pre-test plot of Resilience across 5 schools

There may be significance in the fact that the two schools with the highest scores in these two plots are the schools that have worked with ELLI for a number of years.

3.3.3 Statistical significance between ‘pre-test’ and ‘post-test’ scores

Taking the whole sample of 190 students, statistically significant reduction, between the first and second surveys, in mean scores on *Critical Curiosity* and *Resilience*. Taking the boys alone, there was no significant change.

3.3.4 Gender differences across the whole sample

The only significant differences between boys and girls were that the boys’ mean scores were significantly higher than the girls’ in *Changing and Learning* (only in the post-test), *Critical Curiosity* (in the pre- and post- and the mean of both), *Meaning Making* (only post-test) and *Strategic Awareness* (only post-test).

3.3.5 Relationships between Learning Power and Achievement and Progress in English Maths and Science (SB only)

(As there was little consistency of data provided across the schools, only Stoke Bishop’s data, which was the most comprehensive on attainment - including KS1, Year 3, Year 4 and Year 5 - was used to model these relationships.)

There was no significant association between learning power scores and the means of assessments in English, Maths and Science. However, there was a significant correlation between the post-intervention scores in *Creativity* and high attainment in Mathematics.

Using the difference between KS1 SAT results and Y5 Teacher Assessed levels as the ‘Progress’ measure, learning power scores accounted for 11.8% of progress in English, which is not statistically significant, but 40.2% of progress in Maths, which is approaching a statistically significant relationship. *Resilience* appears to be the best predictor of this.

3.4 (RQ4) (Evidence taken from semi-structured interviews with four Head Teachers – see appendix 3)

How does the learning from these interventions influence and affect consistency of school improvement planning and self-evaluation in a diverse group of schools?

3.4.1 Head Teachers all reported significant improvements to the ways learning and teaching were planned and managed in their schools as a result of working with these concepts and strategies.

For example:

- Teachers would use the ideas to ‘re-fashion’ the curriculum in order to bring out the (seven) dimensions
- The dimensions helped teachers to frame lesson planning objectives and give tailored feedback to reinforce effective learning
- The animal metaphors were found to be very effective in introducing the language and concepts of learning power to children of all the ages, but in the schools accustomed to them, over time, the metaphors tended to be replaced with older children by concept words, such as ‘stick-ability’ for *Resilience* and ‘big picture’ for *Strategic Awareness*
- The ideas were built into other planned activities, such as assemblies and reward systems
- ‘Learning journals’ became an important tool to assist students in self-assessment and managing their own learning and schools in monitoring students’ progress
- The project ‘raised the profile’ of the learning power dimensions throughout the schools
- The project ‘created the sense of an independent learner’ and children became ‘less dependent on their teacher, at least for directing how they were learning’
- In one school, a Learning Power Dimension is now made the focus for learning objectives each week and strategies for it are discussed in a whole staff meeting
- As a result of this weekly brainstorming of strategies for promoting the Seven Dimensions of learning power, it “did more than raise the profile – it became the ‘how?’ of learning” that mattered

3.4.2 Head Teachers reported several ways in which the work contributed to the professional development of their staff, including:

- Teachers were reported as being ‘incredibly committed, hard-working and professional... motivated’ by the project – ‘and they were not all self-selected!’
- Teachers gained significantly from the opportunity to work alongside teachers from other schools
- Compared with a ‘prescriptive, unimaginative, one-dimensional National Curriculum, this (way of working) allows (teachers) to become much more creative’ and at the same time having a clear idea of what we wanted the children to get out of the learning
- Working on the project raised the profile of some younger, less experienced teachers; for example, one teacher in her second year of teaching created the Year 1 ELLI assessment questionnaire and resources ‘sacks’ for each dimension, for the whole school, after working with the Year 1 teachers from the other schools
- One Head Teacher decided to adopt ‘action research’ and ‘enquiry-based collaboration’ as the principle model for continuing professional development (CPD) in future
- One Deputy (Acting) Head Teacher said, “Several staff meetings have been about ELLI. ELLI is part of discussion in individual performance management meetings for teachers and support staff. It is so exciting. We are sharing, ideas are bubbling up - it is a ‘unicorn’ scenario!”

3.4.3 Head Teachers reported that the project had brought significant gains and improvements in relationships and collaborative learning between the schools, saying such things as:

- *Being part of the network has been a great asset to the lead teachers... (giving) opportunities to work with other teachers during 'Brunelli Week'*
- *Other teachers in this school were tied in through Brunelli Week. All teachers have reflected on their practice*
- *A group of schools moving together on a common project has been very powerful – there's been some catching up to do (by some schools) but we have been conscious of this when asking ourselves 'what next?'*
- *Networked learning gave significant time and opportunity to meet with other professionals... also commitment and expectations of what they'd be doing between meetings*
- *What has helped has been the Networked Learning Community. What was thought by lots of teachers was that children had to reach a certain level of maturity before they can access the learning power work – in one visit to (a nursery class), the reception staff showed that the Learning Dimensions have relevance from the start*
- *(Relationships with the other schools has been) A big plus! We already worked closely in parallel with (one other school) ... (all) the schools have moved closer together, but not in the same way.*
- *ELLI will look different in each (school) because of the impact of different factors... it will have greater credibility (in all)*
- *It is good to know we are not on our own*
- *We have been able to show that these ideas work, not just in the leafy suburbs. Children with difficulties respond very positively (too)*
- *It is when the teachers start to get together it becomes so vibrant and exciting. We are using all their wealth of expertise to make the project explode...*

3.4.4 Head Teachers report, with one reservation, that learning power assessments contribute helpfully to the data available for school self-evaluation and reporting, commenting on such things as:

- *Its potential for use in the SEF (School Self-evaluation Form for OFSTED)*
- *The value of selecting information from students' learning journals for reflection in the SEF*
- *Though remaining quite sceptical about ELLI-online (assessment), intending to do more with self-assessment (using the Seven Dimensions)*
- *The usefulness when talking to parents on parents' evenings of feeding back assessments in terms of the Seven Dimensions*
- *One of the undertakings that has had the biggest impact this year is our assessment of y5: each teacher had two days of interview time with their classes to talk individually with each child about their learning profile. This was probably the best bit of INSET we have ever had really because they (teachers) had time to discuss with the children their perception of what they are like as learners and to compare that with the teacher's professional outlook and then give them pointers as to where they need to be moving next as Y6.*

3.4.5 Head Teachers reported that the work had made a difference to the strategic plans and future direction of their schools, including such things as:

- Giving strategic direction – a sense of where to go – to change the curriculum... base it on learning, not content
- Deciding to develop ELLI as part of a Curriculum Review with the new School Improvement Partner – giving ‘deeper opportunities for children to reflect on and evaluate learning’
- Seeing the work in Y1 as *"Enriching children's vocabulary and powerful language for learning." Positive contribution to more learner centered, holistic curriculum. Y1 has done more blocking eg a whole week of science or RE and ELLI supports this very well, eg Cats in History week."*
- *ELLI gives something to hang it all on!*
- (The main thing about) this project? A whole school approach!
- *Schools need ‘Changing & Learning’: they will only improve when they know they can!*
- (We shall introduce) more systematic use of learning journals at KS2
- We shall link (what we have learned through) this project in with our work on ‘The Creative Curriculum’ with QCA (two schools), moving away from prescription in current QCA Schemes of Work, involving parents more and working to improve the curriculum through three themes:
 - using Bristol as a resource;
 - using the pupil voice and enlisting pupils as co-developers of the curriculum and
 - flexibility of timing – to suit learning
- ELLI and Values are closely linked. *We have also done a lot of work on values – they’ve had a huge impact on relationships and ethos. The school has moved forward as a result of work on the two projects.*
- *We consider the seven dimensions as values*
- ELLI has helped to adopt the Values. *Values on their own are ‘motherhood and apple pie’! ELLI helps to put the values into practice. ELLI is ‘the bridge between values and learning’!*

4. Conclusions

The first impression given by meeting and talking with the students, teachers and leaders involved in this project is of overwhelming enthusiasm for it. Both teachers and learners are unhesitant in reporting positive change in themselves, their attitudes, their learning and their practice and attributing that change, in part at least, to working with ELLI. Whilst a research perspective must introduce a note of caution here, in attributing effects to any cause where multiple factors are involved, an unavoidable conclusion is that these young learners (and their teachers) have become extremely articulate about their own learning and development, using the language of learning power. They really seem to ‘know their way around’ these concepts. It reveals a degree of reflective self-awareness that is rare in the age group.

Their reporting of positive change in their relationships was striking in the readiness, range and scope of their answers. This aspect of their reported change is certainly attributable to other factors as well as the ELLI project, including the work on values and ethos that was reported as having already had a ‘huge’ impact on more than one of the schools. However the immediacy of their response in the context of ELLI-related interviews and the way they connected their answers to the ‘Bees’, denoting the explicit work on Learning Relationships

as part of the learning power development, suggest that, whatever brought about the change, working with these concepts has clearly enhanced their ability to reflect and report on it.

One of the most striking things about the qualitative feedback was the way the learners and their teachers echoed each other in reporting on a greater confidence, self-efficacy, self-sufficiency in the children, who now asked their teachers *much less often* for help and guidance in their day-to-day learning and decided for themselves much more. This change was equally welcome to both, it seemed. It is in keeping with the theme of empowerment that runs through the philosophy and training and stems from the nature of ELLI itself: an instrument that uses learners' self-report of their power to learn as a starting point and a means to help them increase it.

Another inescapable finding is the degree of creativity with which the teachers responded to these ideas and the invitation to creativity that they represented. The visual, aesthetic and experiential ways that they devised for the children to learn with and through were remarkable: displays (as on the cover of this report), animal glove-puppets, place-mats for self-assessment, concept lines across the room, ELLI learning journals, sacks of resources for each learning dimension, hot-seating a visiting expert role-playing the figure of Brunel and, not least, the impressive and comprehensive set of teaching resources in the 'Brunelli' Power-point pack... all suggest a professional commitment and collaborative energy admirable in any context. It suggests, and this is supported by the feedback, that the seven dimensions of learning power provide an acceptable stimulus to - and organising framework for - creativity in learning - as well as enshrining that concept as one of their own. This is welcomed by practitioners who see it as under-represented in the rationale and structures of the National Curriculum and it is apposite in view of the finding from earlier research that creativity appears, of all the dimensions, the one most at risk in our system as currently constituted. This finding clearly chimes in with wider moves in national policy towards correcting these shortcomings in favour of a more creative curriculum. The other helpful thing about such a framework for creative teaching is that it allows teachers to span and connect with other compatible approaches and projects, such as 'Thinking Skills' and 'Philosophy for Children', otherwise known as 'P4C'. The way the seven dimensions have been converted into simple 'icons' with which to navigate the 'Brunelli' pack shows how economically they can be used to shape and inform planning, objective-setting, assessment, monitoring, reporting to parents, even performance management for staff.

The only aspect of the project that was not particularly significant in its outcome was the quantifiable data and analysis. No evidence was yielded to support the idea that these children's learning power increased, through the duration or as a result of the project. The many possible reasons for this are enumerated above. The data was incomplete and the analysis of relationships with value-added data remains to be attempted. We should also remember that half of the sample - the Year 1 classes - used paper-based self-assessment, the data from which was not included in the analysis. The data may yet raise questions and give some valuable insights in the light of local knowledge of the differences between the settings and between the contexts of the two assessments, one in Spring and one in Summer, when three months had passed since 'Brunelli Week' had seen the most intensive period of intervention and national tests and formal aspects of the curriculum may have regained prominence. In any case, perhaps this helps to put the 'scientific' aspect of the ELLI programme into perspective. At least one of these head Teachers remains sceptical about the online assessment, whilst nevertheless being completely convinced of the value of the Seven Dimensions as a theory of learning and a framework for improving it.

Overall, it is clear that the project was an enormous success, in which the training in, and adaptation of the learning power ideas played an important part, but not necessarily the most important. As with almost all research into effective learning, the values, commitment and professional judgement of teachers and leaders represent by far the most significant and powerful factors. The work these schools had already done on their values and ethos created conditions in which the ideas could thrive and become an 'engine for change'. The kind of change they make accessible and achievable offers a way forward to policy-makers as well as practitioners looking for creativity and responsibility. These teachers, at least for a time, have re-fashioned, 're-engineered' their children's curriculum and engaged them as co-creators of their own learning experience. The thought of Isambard Kingdom Brunel and his enduring and beautiful suspension bridge is irresistible! One teacher described ELLI as 'giving children a bridge to cross over, to develop for themselves the ability to learn'. One Head Teacher called ELLI 'the bridge between values and learning'. IKB himself would surely have been proud of these 'learning engineers'!

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